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## Explanation of Significant Differences (III)



# LOVE CANAL SUPERFUND SITE

CITY OF NIAGARA FALLS  
Niagara County, New York

EPA  
Region II

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### INTRODUCTION

The United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) announce this Explanation of Significant Differences (ESD) to explain modifications to the selected remedy for the final destruction and disposal of Love Canal dioxin-contaminated creek sediments.

The remedy selection for the destruction and disposal of Love Canal sewer and creek sediments was documented in the October 26, 1987 Record of Decision (ROD) for the Love Canal Site (Site). The selected remedy in the 1987 ROD required that all sewer and creek sediments, leachate treatment residuals, debris, and haul road materials be thermally treated on-site at Love Canal in a thermal destruction unit (TDU) irrespective of the level of contamination and that the treatment residuals be disposed in selected areas on-site. In 1989, the United States and the State of New York and Occidental Chemical Corporation (OCC) entered into a Partial Consent Decree (PCD). In the PCD, OCC agreed to implement portions of the 1987 ROD at its Buffalo Avenue Plant (OCC Plant Site) instead of at the Love Canal Site. A public notice announcing the first ESD, which identified the PCD modifications to the 1987 ROD, was published in The Niagara Gazette and The Buffalo News on June 1, 1989.

On November 26, 1996, a public notice, announcing a second ESD, was published in The Niagara Gazette and The Buffalo News. The second ESD identified modifications to the PCD.

The PCD modifications modified the 1987 ROD to allow segregation of wastes based on concentrations of contaminants in those wastes. As identified in the November 1996 ESD and modifications to the PCD, EPA approved the reclassification of Love Canal wastes in accordance with regulatory changes in waste categories that were promulgated pursuant to the Resource Conservation and Recovery Act (RCRA). The Love Canal wastes were reclassified from the F020 RCRA category to the F039 RCRA category. This reclassification made it possible to incinerate that portion of the Love Canal waste materials which had dioxin levels above 1 ppb and to landfill in a Subtitle C Facility that portion of the wastes which had dioxin levels below 1 ppb. F039 wastes must be treated to meet all applicable universal treatment standards (UTS) [regulatory treatment standards for over 200 organic and inorganic contaminants, including dioxin]. The UTS for dioxin is 1 ppb. There currently are several facilities that have been fully permitted for the incineration of F039 wastes containing dioxin. Once compliance with all UTS is demonstrated, treatment residues must be disposed of in a RCRA Subtitle C landfill. EPA determined that it is no longer necessary to thermally treat all contaminated materials, irrespective of the level of contamination.

Consistent with the F039 requirements, those segregated wastes that have concentrations of contaminants below the UTS will not require prior treatment before land disposal. The November 1996 modifications to the PCD indicated that wastes with contaminant levels which exceed the UTS will be treated utilizing incineration for organic compounds (at facilities that have

demonstrated 99.9999% destruction and removal efficiency (DRE) for dioxin surrogates that are more difficult to incinerate than dioxin and will be operated at that DRE) and stabilization for metals. Some of the Love Canal waste materials have been sent off-site for treatment and disposal since the November 1996 ESD and PCD. This treatment has been conducted, and future treatment and disposal pursuant to this third ESD will be conducted, at commercial facilities outside of New York State instead of at the OCC Plant Site.

This third ESD announces further modifications to the 1987 ROD, as modified by the November 1996 ESD. These modifications relate directly to EPA's approval on December \_\_, 1998 of OCC's petition for a treatability variance with respect to the Love Canal waste materials stored at the OCC Plant Site and their ultimate treatment and/or disposal off-site. The variance modifies the UTS for dioxin and furans from 1 ppb to 10 ppb on a site-specific basis for the Love Canal creek sediments and related materials from the haul roads and sediment dewatering facility. As a result of this modification, the quantities of Love Canal waste materials to be incinerated have been greatly reduced.

The variance was the subject of a 30-day comment period which expired on October 26, 1998. No substantive comments were received on the subject matter of the variance. EPA, in consultation with NYSDEC, approved the variance on December \_\_, 1998.

EPA is issuing this ESD in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. §9617(c), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. §300.435(c)(2)(i). This ESD and those documents which form the basis for the decision to modify the response action will be incorporated into the Administrative Record maintained for the Site in accordance with Section 300.835(a)(2) of the NCP.

The Administrative Record is available for review during business hours at EPA Region II, 290 Broadway, New York, New York 10007-1866 at (212) 637-4308, and at the information repository at EPA, Carborundum Center, 345 3rd Street, Room 530, Niagara Falls, NY 14303 at (716) 285-8842.

## **SUMMARY OF SITE LOCATION, HISTORY, CONTAMINATION PROBLEMS AND SELECTED REMEDIES**

The Site is located in the southeast corner of the City of Niagara Falls, New York and is approximately one-quarter mile north of the Niagara River. Between 1942 and 1954, Hooker Chemicals & Plastics Corporation (Hooker) disposed of over 22,000 tons of chemical wastes in Love Canal. Hooker deeded the Love Canal property to the City of Niagara Falls Board of Education in April 1953. An elementary school was built adjacent to the central portion of the Canal. During the 1950's, home construction accelerated in the area, and by 1972, area lots had been completely developed, including lots with backyards directly abutting the landfill property.

In the mid-late 1970's, wastes were observed on the surface of the landfill and in the basements of homes abutting the Canal. The Site is contaminated with various volatile organic compounds, dioxin, pesticides and heavy metals. The Commissioner of the New York State Department of Health declared a state of emergency at Love Canal on August 2, 1978. President Carter declared two environmental emergencies at Love Canal on August 7, 1978 and May 21, 1980, enabling the federal government to provide financial assistance to the State for the initiation of remedial measures and relocation assistance to the residents.

The first phases of the remedial activities at Love Canal began in October 1978, including Site containment and cutting off of sewer lines contaminated by leachate migrating from the Love Canal.

On May 6, 1985, EPA issued a ROD for the Site which called for the removal of dioxin-contaminated sediments from specific stretches

of Black and Bergholtz creeks and storm and sanitary sewers and the interim storage of these sediments in a containment facility. The sewer cleaning work was completed in late 1987.

On October 26, 1987, EPA issued a second ROD for the Site which required that all sewer and creek dioxin-contaminated sediments together with contaminated debris and treatment residuals from the on-site leachate treatment facility be thermally treated at the Site in a TDU to six nines (99.9999%) destruction and removal efficiency (DRE).

The 1987 ROD called for the thermal destruction of all materials. Nonhazardous residuals from thermal treatment were to be disposed in select areas on-site.

As discussed above, the PCD modified certain requirements of the October 26, 1987 ROD. The most significant modification was the change in the siting of the TDU from the Site to the OCC Plant Site. OCC was also required to process, and bag the excavated sediments and other remedial wastes at a staging area at the 93rd Street School Site. These materials were dewatered and stabilized with the addition of lime and clay. Following stabilization and bagging, the materials were transported to the OCC Plant Site. OCC was required to store these materials in a centralized, permitted storage facility and to seek a permit to incinerate the waste materials in a TDU that was to have been built at the OCC Plant Site instead of at the Site.

As a requirement of the November 1996 ESD and PCD modifications and in order to identify further the Love Canal bagged waste materials currently being stored at OCC's Plant Site, OCC sampled the bagged wastes according to EPA protocols. In May 1997, OCC issued its Phase I Sampling Report, which included criteria for a second phase of sampling. The report presented the sampling results and discussed how the bagged wastes could be segregated into two categories, one category consisting of wastes having levels of dioxin above the UTS of 1 ppb for dioxin, and the other category having levels below 1 ppb for dioxin. These categories would be identified for incineration and landfilling, respectively. For those wastes which

could not initially be identified as being within either category based on the Phase I analyses, OCC conducted a second round of sampling (Phase II) in order to segregate the remaining wastes into the appropriate category for either incineration or landfilling.

## **DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES**

The selected remedy in the 1987 ROD, as modified by the PCD, 1996 ESD and PCD modifications, required that all sediments from the sewers (2,500 yds<sup>3</sup>) and creeks (31,000 yds<sup>3</sup>) remediation, as well as creek debris (1,300 yds<sup>3</sup>), haul road materials (3,900 yds<sup>3</sup>) and leachate treatment residues, such as spent carbon (200 yds<sup>3</sup>), be either incinerated in a commercial TDU or landfilled in a Subtitle C facility, depending on the results of the Phase I sampling, particularly with respect to dioxin. As indicated above, the dewatered and stabilized waste materials are currently being stored on the OCC Plant Site. These materials have been analyzed for purposes of segregating those portions that will meet the action level of 1 ppb of dioxin from those that would not.

The approved variance provides for alternative limitations for purposes of RCRA Land Disposal Restrictions. The UTS for dioxins and furans in sediments is 1 ppb. The variance changes this standard for the Love Canal creek sediments and related materials to 10 ppb. The 10 ppb treatment level is also currently applicable to contaminated soils (63 Fed. Reg. 28556, May 26, 1998); however, by its terms, this regulatory standard was not extended to other contaminated media, such as sediments.

EPA, pursuant to its regulations for site-specific variances, 40 CFR § 268.44(h) (62 Fed. Reg. 64504, December 5, 1997) approved the variance on the basis that it would be "technically inappropriate" to require further treatment of these stabilized sediments. The 10 ppb variance standard for dioxins and furans corresponds to cleanup levels at commercial/industrial sites which, given reasonable site-specific maximum exposure scenarios, EPA has typically found to be protective of human health and the environment.

This ESD permits OCC to segregate further the creek sediment, haul road and facility cleanup waste material into categories above and below 10 ppb dioxin which is now the applicable standard for these waste materials by operation of the variance. Those waste materials that do not exceed the 10 ppb variance for dioxin/furans (or the UTS for other contaminants) can now be landfilled without additional treatment. All materials with dioxin or furan concentrations in excess of 10 ppb of dioxins or furans (or any of more than 200 other contaminants in excess of UTS) will be incinerated in a TDU which has six nines (99.9999%) destruction and removal efficiency (DRE).

RCRA requirements further mandate that, after materials are treated, the residues must be tested to ensure that the RCRA Land Disposal Restrictions have been met. These RCRA requirements mandate that the wastes have been treated to reduce their toxicity or minimize the likelihood of migration of hazardous constituents in the waste so that the long-term threats to human health and the environment are minimized. If the alternative standard applicable through the variance has not been met, the materials must be retreated until the alternative standard has been met. Once the treatment standards have been met, the treatment residuals will be disposed in a RCRA Subtitle C hazardous waste landfill.

All sediments from the sewer remediation, creek debris and spent carbon have been, or will be, incinerated (4,000 yds<sup>3</sup>). However, with the approved variance standard of 10 ppb for dioxins and furans, the majority of 35,000 cubic yards of creek sediments (31,000 yds<sup>3</sup>) and haul road materials (3,900 yds<sup>3</sup>) will be land disposed without further treatment. All RCRA Land Disposal Restrictions will be complied with.

It is important to note that all materials which would be landfilled have been stabilized and placed in double-lined plastic bags which will further reduce the mobility of the hazardous constituents. These materials will be disposed of in a triple-lined RCRA Subtitle C-permitted landfill in the State of Utah which will also require the collection and treatment of any leachate that will be generated.

EPA believes that the incremental risks to human health and the environment from the land disposal of those untreated materials that meet UTS and the dioxin/furan variance level of 10 ppb, along with incineration residuals, would be inconsequential.

#### **SUPPORT AGENCY COMMENTS**

NYSDEC has concurred with the findings of the ESD.

#### **AFFIRMATION OF STATUTORY DETERMINATIONS**

EPA and NYSDEC believe that the remedy remains protective of human health and the environment, complies with all federal and state requirements that are applicable or relevant and appropriate to this remedial action at this time, and is cost-effective. In addition, the modified remedy utilizes permanent treatment and alternative treatment (or resource recovery) technologies to the maximum extent practicable.

#### **PUBLIC PARTICIPATION**

EPA and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. EPA will publish a notice of this ESD in the local newspapers: The Niagara Gazette and The Buffalo News.

The 1987 ROD, the 1989 PCD, the 1996 ESD, the 1996 modifications to the PCD, and the OCC variance petition and EPA's approval of the variance are available for public inspection at the EPA Public Information Office, Carborundum Center Suite 530, 345 Third Street, Niagara Falls, New York 14303. The documents may also be reviewed at EPA's Region II Office located at 290 Broadway, New York, New York 10007-1866 by contacting Damian Duda, Love Canal Project Coordinator, at (212) 637-4269. Any further information can be obtained by contacting Mr. Duda.

As indicated above, this ESD will be included in the Site Administrative Record, which is available at the repositories for public review.